CENTRAL INTELLIGENCE AGENCY RETIREMENT SYSTEM
VALUATION AS OF DECEMBER 31, 1968
UPDATED TO JUNE 30, 1970

Prepared by

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Introduction

Section 261 of the Central Intelligence Agency Retirement Act of 1964 for Certain Employees states: "The Director shall prepare the estimates of the annual appropriations required to be made to the fund, and shall cause to be made actuarial valuations of the fund at intervals of five years, or oftener if deemed necessary by him."

Since the inception of the system under the provisions of the Act in 1964 no special appropriations have been made to the Fund. The system has been supported by employee deductions from payroll, matched by agency contributions. Additional sums have resulted from the transfer of past service employee contributions from the Civil Service system when employees transferred into the CIA system.

This valuation as of December 31, 1968 is the first actuarial study made of the system since it began in 1964. The experience of the system has not been sufficient as of this point to provide adequate rates of resignation, death, retirement, etc. As a result, rates for the Foreign Service Retirement System based on 1963 through 1967 were used extensively, with or without modification as circumstances indicated. As time goes on the CIA experience will become more extensive and meaningful.

Because of the passage of time since the effective date of this valuation, the normal cost distribution and the balance sheet values as of December 31, 1968 have been adjusted to June 30, 1970. These adjusted values reflect the provisions of PL 91-185, an Act approved December 30, 1969, which provides the high three average, sick leave retirement credit, and other benefits. The contribution rate for employee and agency was also increased from $6\frac{1}{2}\%$ to 7%. The normal cost distribution is not affected by general salary increases since December 31, 1969; the balance sheet, however, reflects both benefit and payroll changes attributable to the salary increases approved April 15, 1970. The active and retired numbers and payrolls for December 31, 1968, and June 30, 1970 are as follows:

	Active		Retirees & Survivors	
	Number	Payroll	Number	Payroll
Dec. 31, 1968	[redacted]			
Jun. 30, 1970 (estimated)				

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Summary of Benefits and Contributions
under the Central Intelligence Agency Retirement Act
as of June 30, 1970

ANNUITIES TO PARTICIPANTS-

Immediate annuity:
- Voluntary after age 50 and 20 years of creditable service (10 years with Agency and 60 months of qualifying service).
- Mandatory at age 60 (with exceptions).
- Disability (5 years creditable civilian service).
- Involuntary (at age 50, at least 20 years creditable service, 10 of which must be with Agency including 60 months of qualifying service; at any age, at least 25 years of creditable service, 10 of which must be with Agency including 60 months of qualifying service).

Deferred annuity at age 62:
- Minimum of 5 years of creditable service required. Employee contributions must remain on deposit.

Formula for annuities to participants:
- Full annuity: 2% x high-3 years' average salary x years of covered creditable service, limited to 35 except for sick leave credit.
- Disability: Minimum of five years of creditable service required. Annuity based on minimum of 20 years' service, but not to exceed service which could have been earned before reaching mandatory retirement age of 60.
- Reduction for survivor benefit to spouse: $2\frac{1}{2}\%$ of first $3600 of survivor annuity elected plus 10% of excess over $3600 elected.

Creditable service:

In addition to normal service under the system:

(a) Credit under Civil Service and/or other Federal Retirement systems if proper employee contributions have been transferred in.

(b) Qualifying military service (no employee contribution required).

(c) Credit for unused sick leave (for computation of annuity only - not affected by 35 year limit).

Purchased annuities:
- Based on special tables, additional annuity may be purchased (by voluntary contributions) to supplement the regular annuity.

ANNUITIES TO SURVIVORS-

Annuities to surviving widows and children:

All qualified widows and children of deceased active or retired participants receive annuities unless:

(a) The participant dies in active service with less than 18 months of creditable service.

(b) The participant dies while awaiting deferred annuity.

(c) The participant elected a life annuity for self only (children eligible, widow is not).

Annuities to surviving husband:

In case a female participant dies after 18 months of creditable service, her husband is eligible for annuity only if he qualifies as a dependent widower.

If a female participant dies after retirement her husband receives an annuity only if she has elected such an annuity for him.

If a female participant dies while awaiting a deferred annuity, the husband receives a lump-sum payment under the legal order of precedence in the absence of a designation of beneficiary.

Annuities to special beneficiaries:

An unmarried participant may provide a survivor annuity to a person named as having an insurable interest, provided such participant shall have passed a physical examination.

Formula for annuities to survivors:

In case of death of an annuitant, the annuity payable to the surviving spouse shall be 55% of the participant's annuity designated as the base. In case of death in service the surviving spouse, if eligible, is entitled to the greater of (a) 55% of the participant's earned annuity, or (b) 55% of the participant's annuity based on 20 years' service, but <u>not to exceed</u> service which could have been earned before reaching age 60.

The annuity for each surviving child with parent is the smaller of $900 or $2700 divided by the number of children; for each child with no parent the smaller of $1080 or $3240 divided by the number of children. These amounts are automatically increased by the cost-of-living increases which occur after October 31, 1969.

COST-OF-LIVING ADJUSTMENTS-

(a) Effective the first day of the third month which begins after the price index shall have equaled a rise of at least 3 per centum for three consecutive months over the price index for the month last used to establish an increase, each annuity payable from the Fund which has a commencing date not later than such effective date shall be increased by 1 per centum

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plus the per centum rise in the price index (calculated on the highest level of the price index during the three consecutive months) adjusted to the nearest one-tenth of 1 per centum.

(b) The effect of cost-of-living increases received by the retired participant is passed on to his survivor annuitants.

(c) The commencing annuity for surviving children shall be increased by the cost-of-living increases which occur after October 31, 1969.

REFUNDS TO PARTICIPANTS-

On resignation:

Refund of participant's contributions with interest thereon at 4 per centum per annum to December 31, 1947, and 3 per centum per annum thereafter compounded annually to December 31, 1956 (or, in the case of a participant separated from the Agency before he has completed five years of service, to the date of separation) and proportionately for the period served during the year of separation (unless deferred annuity has been elected).

REFUNDS TO SURVIVORS-

If contributions with interest exceed the total amount returned to a deceased participant or his survivors in the form of annuities, the excess shall be paid to a designated beneficiary or in accordance with the legal order of precedence.

CONTRIBUTIONS-

Contributions by employee - seven per cent of salary.
Matching contributions by CIA - seven per cent of salary.
Transfer of employee contributions for creditable service under Civil Service.
Payments by Treasury of interest on invested portion of Fund.

VOLUNTARY CONTRIBUTIONS BY PARTICIPANTS-

Participant has the option of depositing additional sums at interest to be used at his retirement according to his election under Section 281.

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Valuation Interest Rate

A valuation interest rate of 5% was used. This is the rate used in the most recent Foreign Service valuation and is consistent with rates currently being considered for long range projections by Social Security and Civil Service.

Normal Cost

Normal cost can be defined as the total level percentage of an employee's salary required to finance the benefits which he is expected to receive from the system. If such a percentage of salary (regardless of source) were constantly set aside from the time the employee entered the service until the time he was separated from active service, it would accumulate at the valuation interest rate to an amount sufficient to provide his annuity or other benefits to which he or his survivors are entitled. (A part of the total normal cost is provided by employee contributions, transfer of employee contributions from Civil Service, agency contributions, appropriations, etc. Interest earned by the fund or appropriated interest on the unfunded liability is not part of the total normal cost.)

Below are given normal cost distributions as of December 31, 1968, adjusted to June 30, 1970, in order to reflect the benefit and contribution changes provided by PL 91-185. The lower part of the table shows the source of the normal cost. The item, "Transfer of member contributions from Civil Service" requires explanation. The figure of 2.88% means that the lump sum transfer of employee contributions is equivalent to 2.88% of the employee's future salary. In other words, this much of the total normal cost is provided by a lump sum transfer whereas the two 7% contribution items come in as a steady percentage of future payroll as does (for this purpose) the residual normal cost.

As a part of this valuation a determination of the normal cost was made on the assumption of an annual increase in salaries of $3\frac{1}{2}\%$ and an annual increase in the cost-of-living index of $1\frac{1}{2}\%$. On these assumptions it was found that the normal cost is about $1\frac{1}{2}$ times what it is on a static basis. Instead of 31.34% it would be about 47% on these dynamic assumptions. Realistically, it should be borne in mind that on a normal cost basis assuming salary and cost-of-living increases, the cost of retirement system benefits runs close to 50% of salary. This concept of financing (normal cost as percentage of current pay) is about as conservative as any basis should be. The least conservative method is "pay as you go", in which benefits are not financed as they are earned but are paid when they fall due. The normal cost approach is excellent for comparing the relative costs of different retirement systems, provided the same valuation rate of interest is used.

CIARDS - NORMAL COST

Valuation at 5% as of December 31, 1968,
adjusted to June 30, 1970

Type of Benefit	Percentage of Salary
Benefits to members:	
Service annuities 1/	23.68%
Disability annuities	2.40
Deferred annuities	.65
Refunds on resignations	.55
Total member benefits	27.28%
Benefits to survivors:	
Annuities for death after service retirement	2.94%
Annuities for death after disability retirement	.31
Annuities for death in service	.67
Annuities for death of deferred retirees after age 62	.09
Refunds for death in service 2/	.05
Total survivor benefits	4.06%
Total normal cost (member and survivor benefits)	31.34%
Mandatory contributions from members	7.00%
Transfer of member contributions from Civil Service	2.88
Matching contribution by agency	7.00
Residual normal cost to Government	14.46
Total percentage required	31.34%

1/ Includes all immediate annuities except disability.
2/ Includes refunds for death in deferred status before age 62.

Comparison with Civil Service System Normal Cost

Currently the Civil Service normal cost is estimated at about 14% of payroll, based on a valuation rate of $3\frac{1}{2}$%. If a valuation rate of $3\frac{1}{2}$% were used on the CIA system total normal cost would increase from 31.34% to roughly 46%. The question arises as to why the rate under CIA is so much higher than under Civil Service. The reasons are listed as follows:

1. The average entry age of about 36 years for CIA is much higher than the average entry age for Civil Service, which is in the vicinity of 27 years. This is caused partly by the fact that personnel must serve for 5 years under the Civil Service system before coming under the CIA system. The average retirement age under CIA is approximately $57\frac{1}{2}$ years. Under Civil Service it is about $60\frac{1}{2}$ years. A lower retirement age combined with a higher entry age contributes directly to higher normal cost, particularly when prior service is credited.

2. The resignation or turnover rate is much lower under CIA. The percentage of new entrants into CIA who stay until retirement ranges from about 63% for entrants at age 30 to 84% for entrants at age 51. Under Civil Service only about 15% of the new entrant males at age 27 are still in service at age $57\frac{1}{2}$ and only 4% of the new entrant females are still in service at age $57\frac{1}{2}$. Because of this, the ratio of benefits to salary earned is much greater under CIA. This relation translates to normal cost, which is the ratio of the present value of benefits for a new entrant divided by the present value of his future salary.

3. The salary scale under CIA is much steeper than under Civil Service. Since annuities are based on the final 3-year average, the ratio of benefits to contributions is higher using a steeper salary scale. Under CIA, a cross-section of salaries for participants of all ages shows that the average salary at age $57\frac{1}{2}$ is 2.2 times the salary at age 30. The Civil Service salary scale shows a ratio of only 1.4 for the same two ages.

4. The formula for computing annuities under CIA is based on a flat 2% per year of service, whereas under Civil Service less credit is given for the first 10 years.

Balance Sheet

As explained in the introduction, the balance sheet values as of December 31, 1968 have been adjusted to June 30, 1970. The assets and liabilities of the 1968 valuation were adjusted to give effect to the estimated level of the June 30, 1970 payroll and to reflect the effect of changes provided by PL 91-185, approved December 30, 1969.

It is noted that the total liabilities for the retired roll are shown separately in parentheses below the total liabilities for both actives and retired roll. Since a considerable amount of service under Civil Service and military is creditable under the CIA system, it would be informative to show a proportionate breakdown between these two areas on both the balance sheet and the normal cost table. However, this division of service was not in a form to be used as of this time.

The balance sheet figures have been obtained by first projecting (year by year) the various benefits and receipts. Because the experience of the system is insufficient at this point to provide adequate rates of retirement, death, etc., rates were borrowed from the experience of the Foreign Service Retirement System covering the years 1963 through 1967. The salary scale and withdrawal rates were based on CIA experience for 1967 and 1968. Rates of death, deferred annuity election, disability, and service were borrowed from the Foreign Service experience. In these areas the experience under CIA was too scanty to provide rates which were at all reliable.

The projections which form the basis for the balance sheet are for only the estimated active and retired forces as of December 31, 1968 and do not include new entrants beyond that date. The projections are discounted at 5% to obtain present values. The present value of a series of benefits can be defined as the amount of money which would have to be invested in a fund at a given rate of interest (in this case 5%) to provide the series of benefits year after year until the last benefit has been paid, at which time the theoretical fund for the benefits would have become exhausted.

Obtaining the present value of future residual normal premiums, even though these normal premiums may or may not be expected to be received, provides a means of obtaining the net accrued liability, part of which is made up by the fund and the remainder by the unfunded liability.

The net accrued liability by this method is different from the pure past service liability as it is generally conceived. The net accrued liability by the normal cost method can be defined as the liability for all benefits expected to be paid to currently active and retired participants less all future total normal premiums (including contributions, etc.). If the full normal premiums are not met each year, the unfunded liability increases. In the same manner, on a pure past service basis, the unfunded past service liability would increase year by year if the accruing increments in past service liability were not met. The accrued liability is the amount that should be on hand if the system is to be fully funded.

CIARDS - Balance Sheet

Valuation at 5% as of December 31, 1968, adjusted to June 30, 1970

Liabilities and assets with respect to existing force of active and retired members, survivors, and potential survivors (includes no future new entrants)

Present Value
in Thousands

[redacted]

Liabilities 1/

Benefits to members:
- Service annuities 2/
- Disability annuities
- Deferred annuities
- Refunds on resignation

Total member benefits

Benefits to survivors:
- Annuities because of death after service retirement
- Annuities because of death after disability retirement
- Annuities for death in service
- Annuities for death of deferred retirees after age 62
- Refunds for death in service 3/

Total survivor benefits

Total liabilities

(Retired roll portion of liabilities)

Assets

Funds in hand

Future contributions by members at 7.0% of future salaries

Future matching contributions by Agency at 7.0% of salary

Residual normal contribution by Government (see Normal Cost table) 4/

Total assets

Excess of liabilities over assets 5/

1/ Liabilities because of both past and future service.
2/ Includes all immediate annuities except disability.
3/ Includes refunds for death in deferred status before age 62.
4/ To determine the unfunded liability it is necessary to assume that the full normal cost will be paid in future years.
5/ Unfunded accrued liability (approximately equal to past service unfunded liability).

Financing Considerations

The table on page 11 shows a projection of future receipts and expenditures of CIARDS under three different financing assumptions starting with salaries for the fiscal year 1969. This projection does not reflect salary and cost-of-living increases since December 31, 1968 nor does it assume any future salary or cost-of-living increases. To this extent it is unrealistic and probably unduly pessimistic in its forecast of future operations.

The right hand column of the table shows that under the present basis the Fund, supported by matching agency-employee contributions, would go broke after 1988 under static assumptions. Because of legislation enacted and contemplated which will provide additional financing, no effort was made to determine the life of the Fund on the existing basis using dynamic salary and cost-of-living assumptions.

The next to last column of the table shows a projection of the Fund, on static assumptions, on the basis of financing provisions now contained in the Civil Service and Foreign Service Acts. As shown by footnote "f", interest on the unfunded liability and payment of annuities based on military service would be provided automatically by the Treasury. Under such conditions the Fund would hold out until after 2028. A projection of the Foreign Service system shows similar performance. However, under dynamic assumptions ($3\frac{1}{2}\%$ annual salary increases and $1\frac{1}{2}\%$ annual cost-of-living increases) the Foreign Service fund continues to grow beyond the year 2050. Under similar dynamic assumptions the CIA fund could be expected to perform much the same as Foreign Service and continue to grow indefinitely.

The third from the last column shows the projected Fund on static assumptions but with full financing of normal cost and interest on the unfunded liability.

There are those who feel that the CIA and Foreign Service systems should be financed on a full normal cost basis. Others advance the counter argument that these systems are really part of the overall Government civilian system and should be financed at the same contributory level with supplemental appropriations when and if needed. They point out that much of the service credit is carried over from the Civil Service system and that the benefit provisions differ very little from some of the specialized categories under Civil Service.

With legislation recently enacted for transfer to the fund of employer contributions to match employee contributions for creditable service under Civil Service, and assuming legislation to provide financing provisions similar to those contained in the Civil Service and Foreign Service Acts (and employing the same agency-employee matching percentages), the CIA system should have no financial problems in the foreseeable future.

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